

MICRONEEDLE DEVICES AND METHODS OF MANUFACTURE

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ABSTRACT OF THE DISCLOSURE

Microneedle devices and methods of manufacturing the microneedle devices. The microneedle devices include microneedles protruding from a substrate, with the microneedles piercing a cover placed over the substrate surface from which the microneedles protrude. The cover and the microneedle substrate together define a capillary volume in fluid communication with the base of each microneedle. One manner of using microneedle arrays of the present invention is in methods involving the penetration of skin to deliver medicaments or other substances and/or extract blood or tissue. Manufacturing methods may include simultaneous application of pressure and ultrasonic energy when piercing the cover with the microneedles.

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